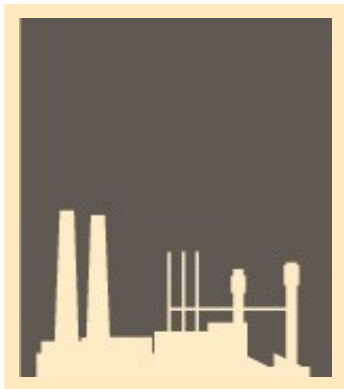


**MRO Software Inc.
MAXIMO
CSWS Material Management
User's Group Meeting
18 Mar 04**

make it *all* count™



Overview

- **MRO Software Customers**
- **Strategic Asset Management (SAM)**
- **SAM in the DoD**
- **SAM in the ALC's (Example)**
- **Technology**

Did you know that MAXIMO is used by...

- 10 of the 11 largest **AEROSPACE & DEFENSE** companies
- 9 of the 18 largest **ELECTRONICS & ELECTRICAL EQUIPMENT** companies
- 6 of the 10 largest **METAL** companies
- 7 of the 10 largest **AUTOMOTIVE** companies
- 13 of the 13 largest **PHARMACEUTICAL** companies
- 7 of the 10 largest **OIL & GAS** companies
- 6 of the 9 largest **COMPUTERS & OFFICE EQUIPMENT** companies
- 14 of the 17 largest **ENERGY** companies
- 3 of the 4 largest **FOREST & PAPER PRODUCTS** companies
- 5 of the 6 largest **BEVERAGE** companies

MAXIMO Across Various Industries

| | |
|-----------------------|---|
| Aviation | Atlantic Coast Airlines, Alaska Airlines, Federal Express, FR Aviation, DOI |
| Transportation | Ruan, Frito Lay, Weyerhaeuser, Long Island Railroad, BOC Gases, WMATA |
| High Tech | Hewlett Packard, Intel, IBM, Compaq, Motorola, Philips Semiconductor |
| Facilities | USAA, Citibank, Washington Post, American Red Cross, Pittsburgh Aprt |
| Resorts | Walt Disney World, MGM Grand, Mirage, Venetian |
| Utilities | Duke Energy, Seabrook Nuclear, NY Power Authority, Calpine, Cinergy |
| Water | Atlanta, Denver, Philadelphia, Portland, Los Angeles, St. Louis |
| Education | Univ of Chicago, Penn State, UVA, Princeton, MIT, Purdue, Michigan State |
| Automobile | GM, Ford, Toyota, Honda, DaimlerChrysler, Saturn, Volvo |
| Oil & Gas | Suncor, BP Amoco, Shell, ExxonMobil, Chevron Texaco, Suncor |
| Manufacturing | Boeing, Whirlpool, GE, Boise Cascade, 3M, ADM, Callaway Golf |
| Pharmaceutical | Merck, Eli Lilly, Johnson & Johnson, Dupont, Bristol Meyers-Squibb |
| Food | Coca Cola, Nestle, Heineken, Ocean Spray, Cargill, General Mills |
| Public Sector | Air Force ALCs, Army Depots, Navy Shipyards, NAVAIR Depots, NAVFAC, National Park Service, VA, US Mint, USACE, Maryland DOT, City of San Francisco, LA County Public Works, Philadelphia Water Dept, Space/Bombing Ranges, Dover Port Mortuary |

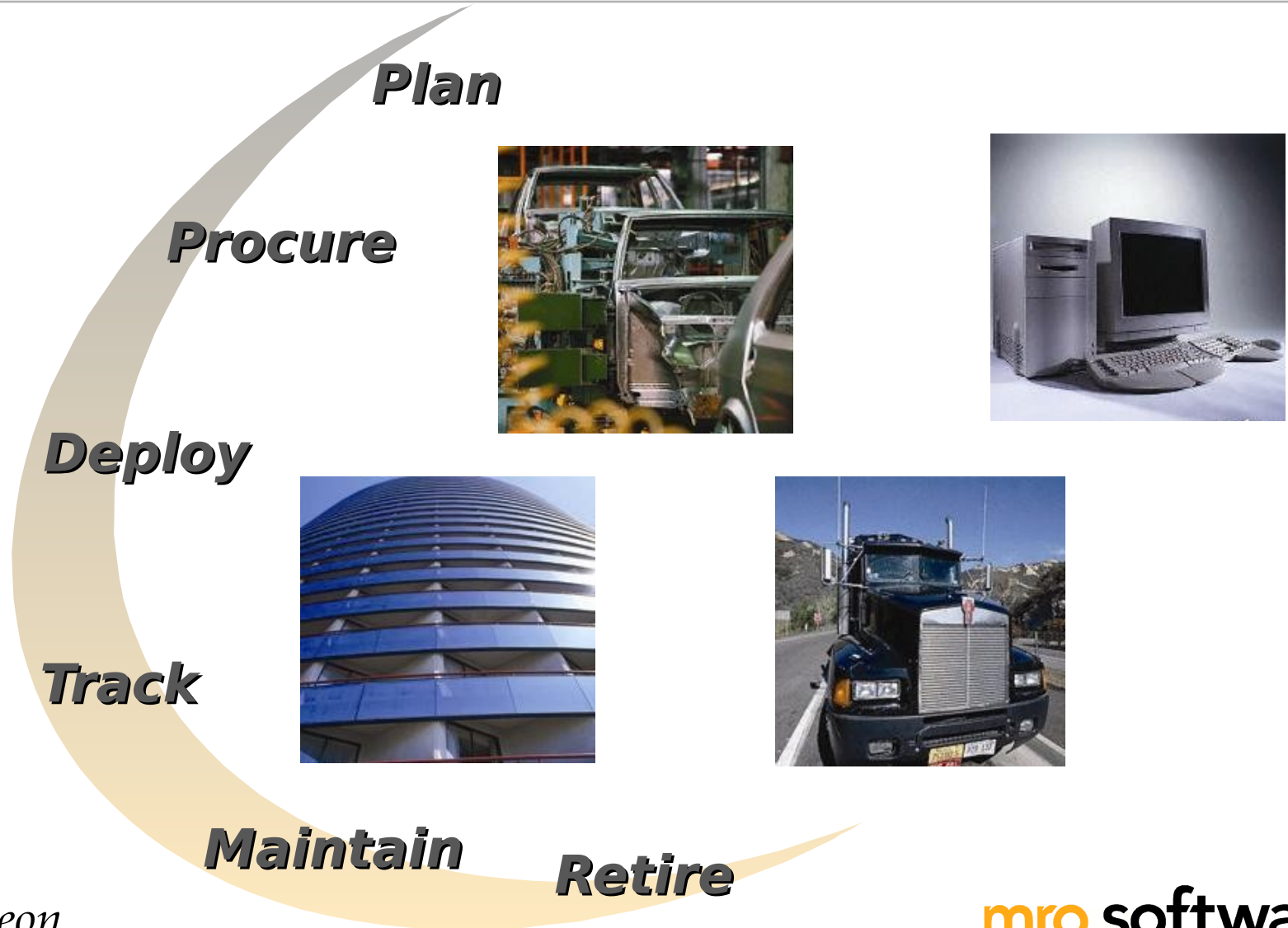
MAXIMO in the Public Sector

- Dept of Defense
 - Air Force
 - Navy
 - Army
 - Army Corps of Engineers
 - Marine Corps
- Dept of Agriculture
- Dept of Commerce
- Dept of Energy
- Dept of HHS
- Dept of Homeland Security
- Dept of Interior
- Dept of Justice
- Dept of State
- Dept of Transportation
- Dept of Treasury
- Dept of Transportation
- Dept of Veterans Affairs
- Pentagon – Wash HQ Services
- Central Intelligence Agency
- NASA
- United Space Alliance (USA)
- Office of Secretary of Defense
- GSA Public Services Division
- FDIC
- Ronald Reagan Building
- BOS/Support Contractors
- A&D Contractors
- Systems Integrators
- Consulting Partners

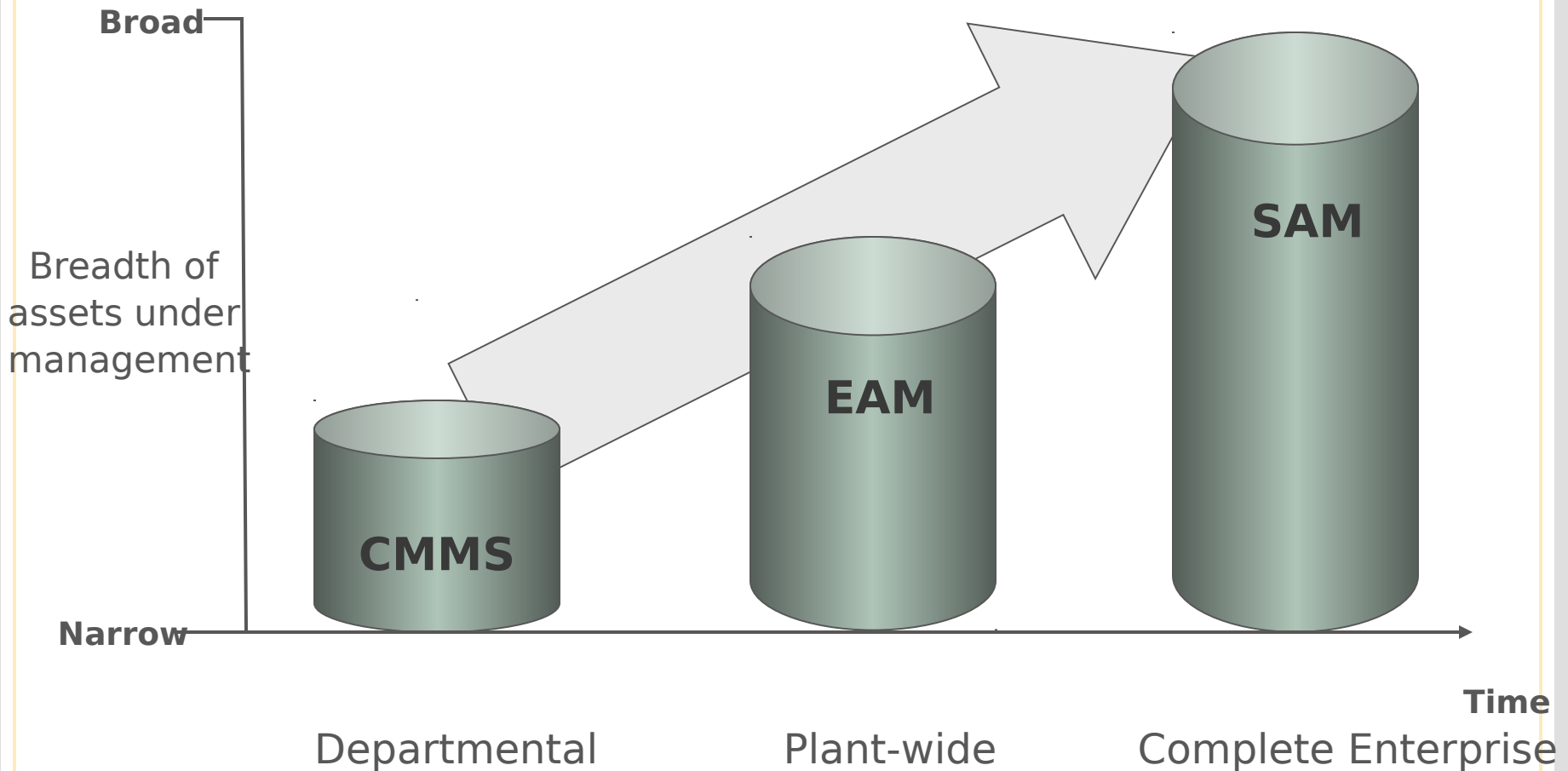
MAXIMO in the Air Force

- Warner Robins ALC
- Oklahoma City ALC
- Ogden ALC
- Dover Port Mortuary
- AMARC
- Edwards AFB
- Eglin AFB
- Maxwell AFB
- Space Lift Range Systems Contract (SLRSC)
- Range Support Automation (RSA) Contract
- Range Technical Support Contract (RTSC)
- Forward Operating Location (FOL) Contract
- Range Support Services (RSS) Contract
- Joint Technical Test & Training Support (J-TECH) Contract
- Joint Base Operations and Support Contract (J-BOSC)
- Personnel Support Services III
- Counterdrug Surveillance and Control System Operation Maintenance and Support Services (CSCS) Contract
- BOS/BCE/Housing Contractors
- A&D Contractors
- Support Contractors
- Systems Integrators

Common Asset Lifecycle

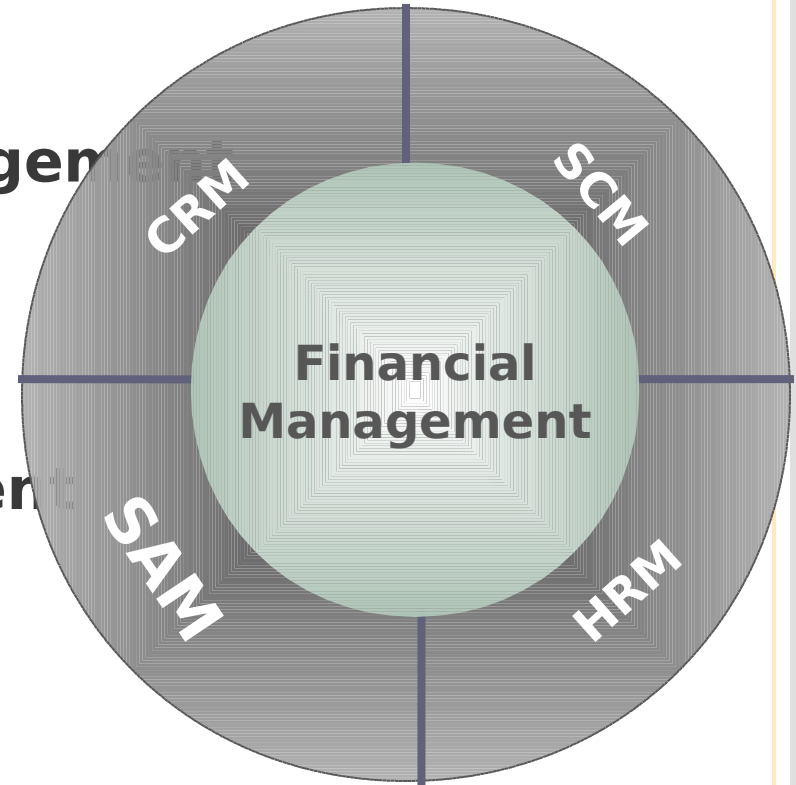


Evolution of Asset Management



Enterprise Application Portfolio

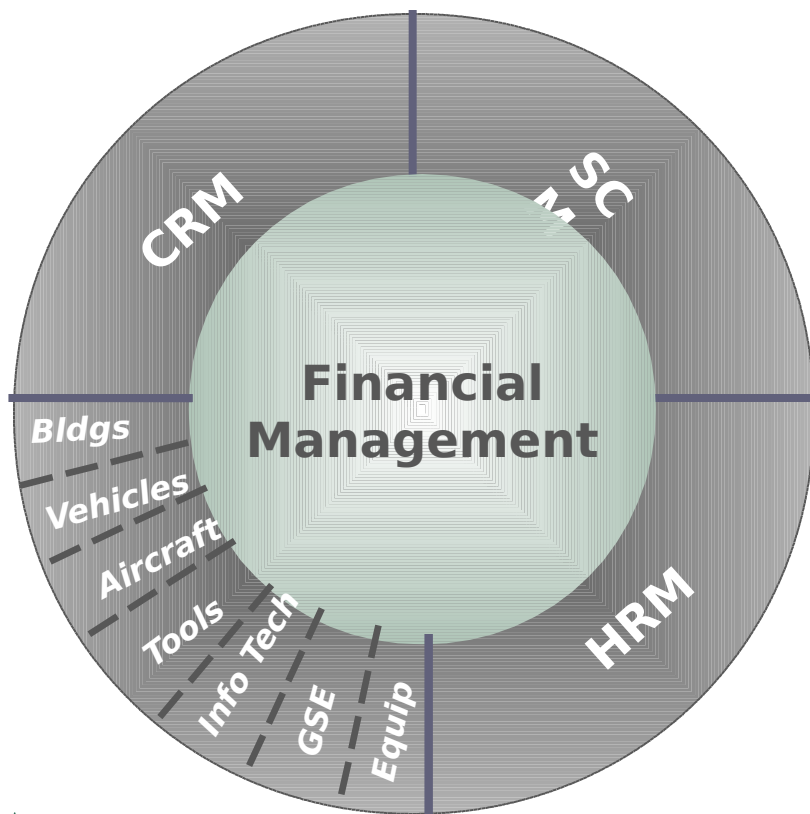
- Financial Management
- Customer Relationship Management
- Supply Chain Management
- Human Resources Management
- ***Strategic Asset Management***



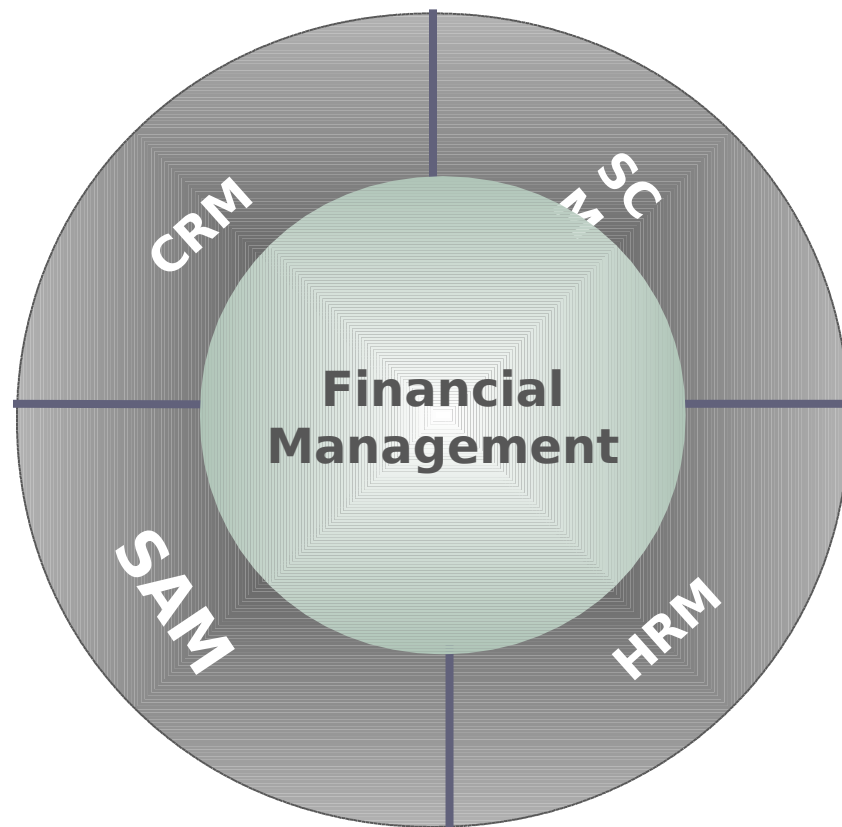
“Manage and optimize performance of all assets that have a direct and significant impact on an organization’s operations and performance.”

Asset Management Approaches

Stove-piped Asset Management



Strategic Asset Management

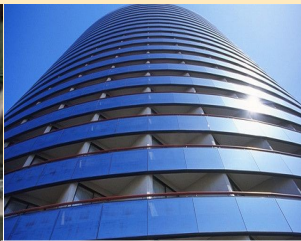


The MRO Software Strategy

Strategic Asset Management



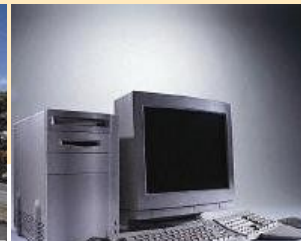
Production



Facilities



Fleet



IT

**Nuclear
Power**

**Transportati
on**

Transmission & Distribution

Pharmaceuticals

Industry
Solutions

Single Technology Platform
100% Web Architecture

The MRO Software Strategy (cont'd)

1. MAXIMO SAM Platform as foundation for product offerings
2. Industry Solutions extend MAXIMO Platform
3. Customer Specific Configuration extend Industry Solutions



Configuration vs. Customization

Configuration

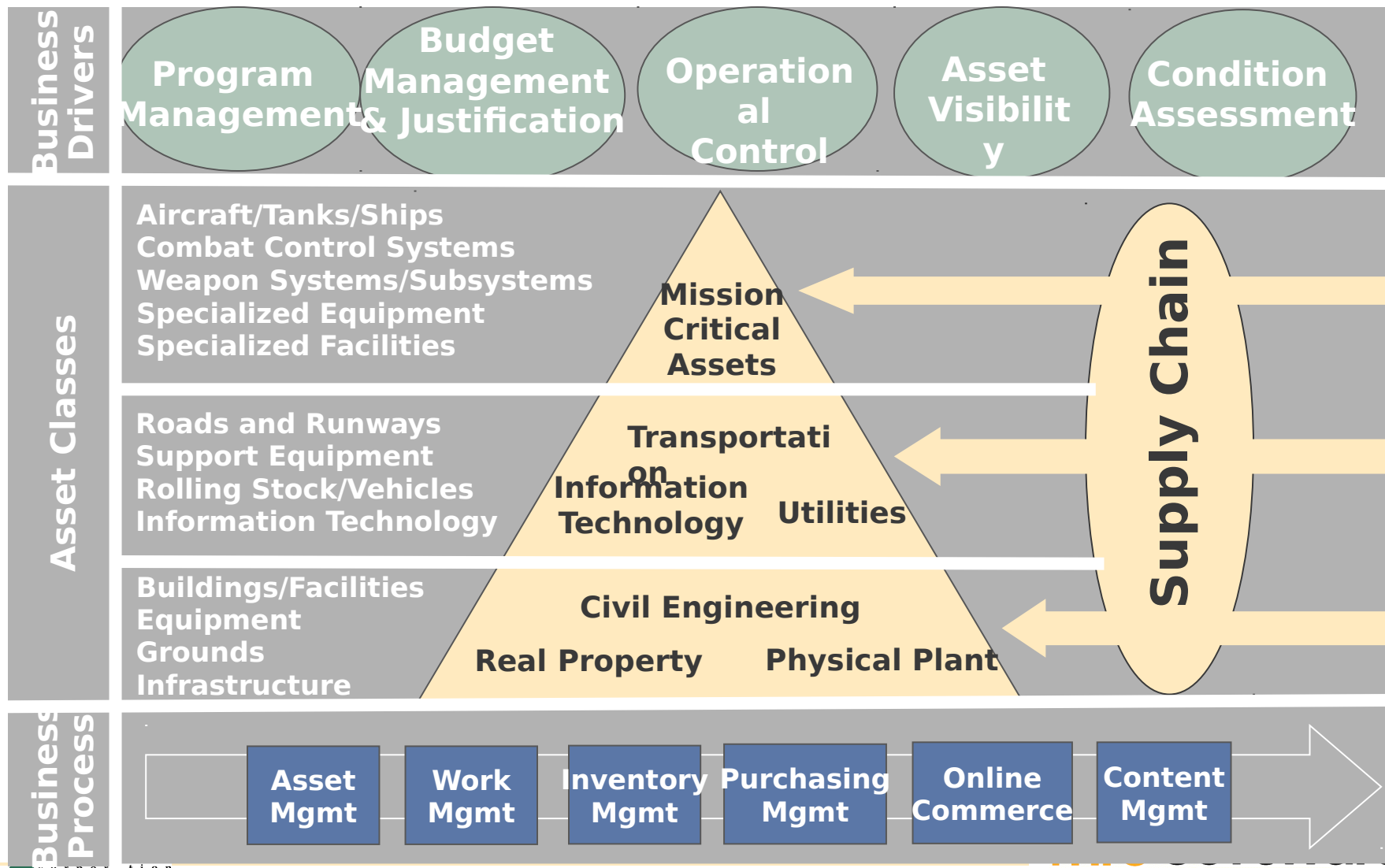
Modifying application software business rules or business processes in a manner that avoids source code changes and where tools are available to automatically upgrade changes to each new release of the software.

Customization

Modifying application software business rules or business processes by changing source code in a manner that requires repeating the process with each new release of the software.

Note: To avoid the “cost of ownership” issues that Customization presents, MRO Software does not allow its source code to be modified - never have, never will!

Strategic Asset Management in DoD



Strategic Asset Management (SAM) Solution

Provides ability to capture/manage information on mission critical assets (weapon systems, vehicles, equipment, spare parts, inventory, etc.)...enables leadership to make informed decisions based upon requirements, resources, and safety considerations.



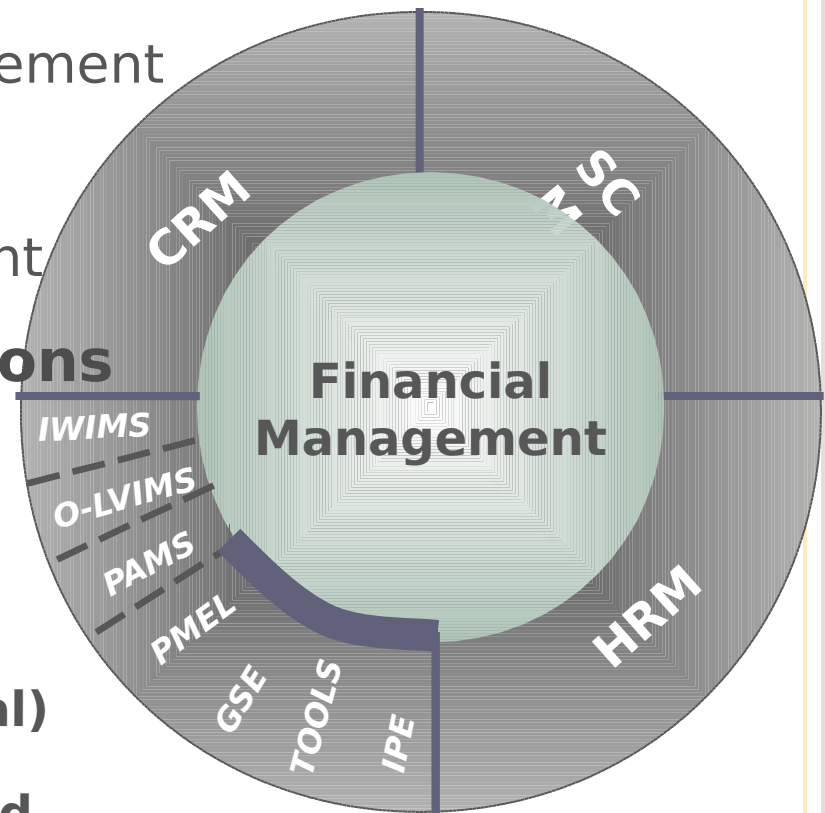
Air Logistics Centers (ALCs) Enterprise Application Portfolio (Example)

- **SAP, Oracle, PeopleSoft, Custom Developed ??**

- Financial Management
- Customer Relationship Management
- Supply Chain Management
- Human Resources Management

- **Multiple Stove-piped Solutions**

- *Asset Management → FEM*
- *COTS, GOTS, Custom*



**SAM (Partial)
&
Stove-piped
Solutions**

Air Logistics Centers (ALCs)

(Example)

- **Background**

- Support for Warner Robins, Oklahoma City, and Ogden ALCs
- Asset Management of four functional areas integrated into single database structure – Industrial Plant Equipment, Metrology, Ground Support Equipment and Tool Management
- Tracks over 220,000 pieces of equipment, 100,000 tools, and 120,000 inventory items

- **Metrology**

- System used for both Contractor and Organic work
- Manages complete business process – Recall, tracking asset thru Lab, capturing work performed (technician, hours, parts, standards, etc.), and shipment
- Quality Module provides In-Process Reviews (IPR) and Quality Process Reviews (QPR)

Air Logistics Centers (ALCs) (Example)

- **Industrial Plant Equipment (IPE)**

- Manages demand and preventive maintenance
- Supports predictive maintenance and large projects

- **Ground Support Equipment (GSE)**

- Supports both maintenance and movement of GSE
- Supports positioning of GSE at aircraft
- Provides Q/A functionality for contractor work
- Currently implementing GPS tracking of GSE

- **Tools Management**

- Supports inventory management (stocking/restocking of bulk, serialized, consumable, safety tools) and operations of tool cribs (issuing, exchanges, tracking, etc.)
- Provides kitting functionality – templates and tool kits
- Integrated with Metrology – ensures TMDE tools are tracked/calibrated on schedule

ALC's Asset Classes (Examples)

- **Industrial Plant Equipment (IPE)**

- CNC machines, lathes, X-ray machines, degreasers, etc.
- Hoists, chains, cables, slings, harnesses, rope assemblies, etc.
- Torque wrenches, meters, scales, etc.
- Pneumatic equipment

- **Ground Support Equipment (GSE)**

- **Powered Equipment**

- Man lifts, carts, diesel water blasters, vacuum cleaners, etc.
- Flood lights, heaters, air conditioners, etc.

- **Non-Powered Equipment**

- Engine stands, wing stands, jacks, etc.
- Dollies

- **Tools**

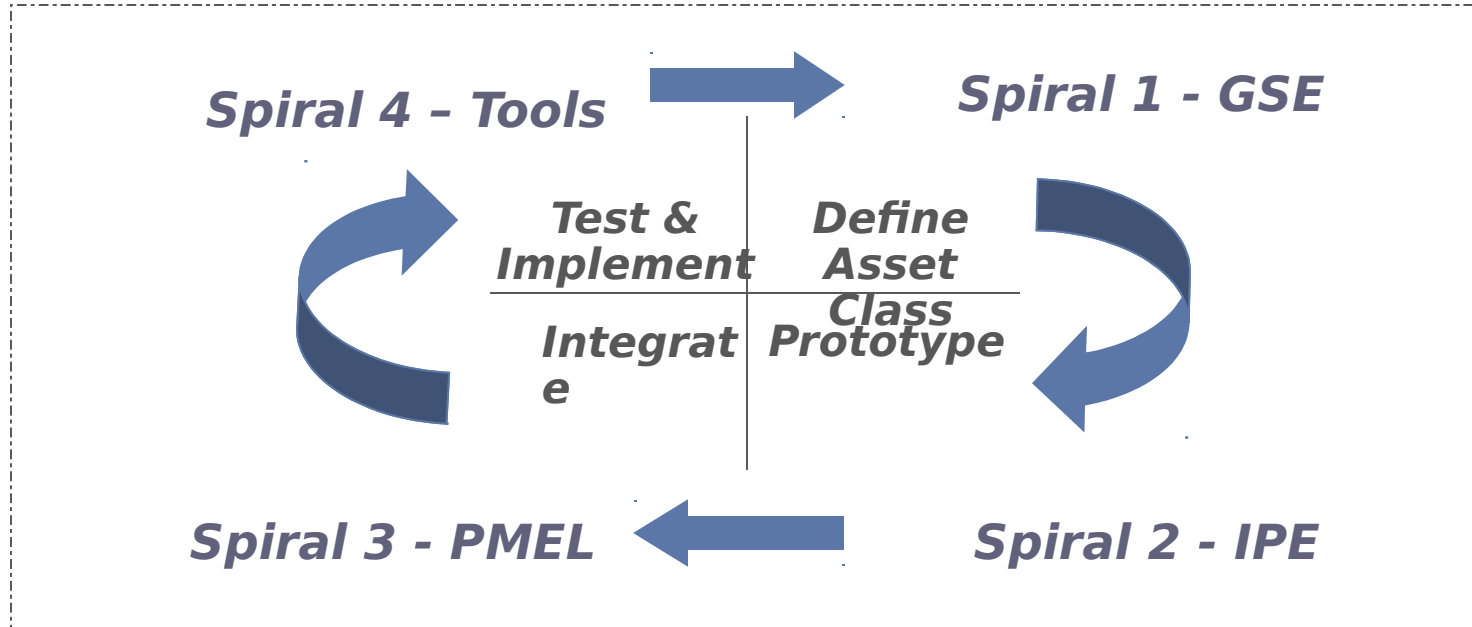
- Calibrated – torque wrenches, meters, scales, etc.
- Inspected – hoists, chains, harnesses, etc.
- Bulk – hammers, pliers, etc.
- Consumables – tape, gloves, etc.
- Tool Sets – drill bits, sockets, etc.
- Safety – gloves, goggles, etc.
- Kits - contain calibrated, inspected, bulk, tool sets, etc.

- **Precision Measurement Equipment Lab (PMEL)**

- Torque wrenches, micrometers, etc.
- Signal generators, oscillators, digital multimeters, etc.
- RF power sensors, etc.
- Radar test sets (ANUPM147), etc.

Evolving the ALC's SAM Capabilities

Innovation, Transformation, and Consolidation
of Business Functions/Systems at the ALCs
using a Spiral Development Approach

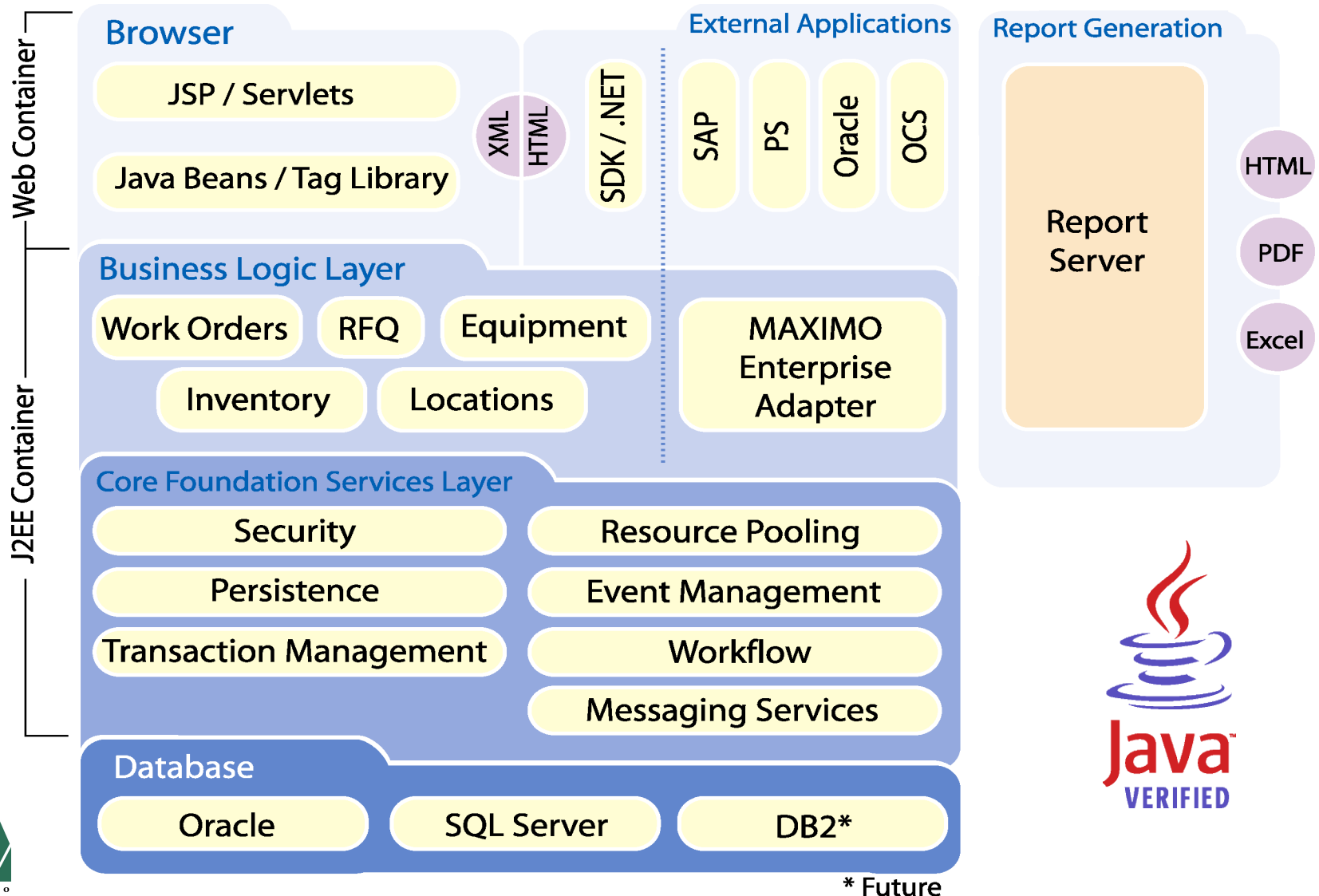


**Facilities and Equipment Maintenance (FEM) /
MAXIMO**

DoD Legacy System Interfaces (Examples)

- Air Force ALCs
 - D035K - Supply
 - G035A (MBMCS) - Financial/Labor
 - E046B (LSMS) - Labor Standards
 - G037G (MLDCS) - Cost Centers
 - DO38 - Calibration Data Analysis
 - DMAPS (NRT) - PMEL
 - DMAPS (EOD) - Comp Work
 - SBSS - In Testing
- Army Depots
 - DPAS - Equipment Status/History
 - AMCISS - Supply
- Navy Shipyards
 - FR - Financial
 - ATMS - Training
- NAVAIR Depots
 - Compass Contract - MRP II
 - CRIS - Calibration
 - MEASURE - Metrology
 - NIMMS - Inventory
 - NIFMS - Financial/WIP
 - JON - Job Orders
- Army Corps of Engineers
 - UPASS - Security
 - APPMS - Personal Property
 - CEFMS - Financial/Labor/ Inventory/ Equipment
- Dover Port Mortuary
 - Defense Casualty Information Processing System

Architectural Components



GCSS-AF Integration Framework

- MAXIMO provides...
 - Standards-based technologies for designing, developing, and deploying web-based solutions
 - J2EE Verified Architecture by Sun
 - Services of Commercial Application Servers
 - Provides infrastructure to support Security Requirements
 - Integration framework based upon industry standards
 - Supports centralized data with decentralized execution
- This ensures the Air Force...
 - Portability
 - Scalability
 - Flexibility
 - Interoperability

Interoperability

- MAXIMO Enterprise Adapters (MEAs)
 - MAXIMO for SAP / Oracle Financials / PeopleSoft
 - Generic Adapter (e.g., Lawson, CostPoint, JD Edwards)
- MAXIMO e-Commerce Adapter
 - MRO Software Operations Center Access (e.g., e-Commerce)
 - Integration with other e-procurement applications (e.g., Ariba)
- Reporting/Metrics
 - Reporting applications (e.g., Oracle Discoverer, Crystal Reports)
 - Trend Analysis Tools
 - Enterprise Data Warehouses (EDWs)
- COTS, GOTS, and Legacy System Integration
 - MAXIMO Enterprise Adapters
 - Software Developers Center
 - Portal Integration
 - Custom Built (e.g., Air Force, Army, Navy)



Questions...

Army Corps of Engineers

- **Background**

- Currently support Portland, Walla Walla, and Omaha districts
- Asset Management for many different types of assets integrated into single database structure – industrial plant equipment, facilities, personal property, real property, and vehicles.
- Currently, tracks over 15,000 pieces of equipment and over 10,000 inventory items for three districts. At completion will track over 250,000 assets in 50 districts.

- **Industrial Plant Equipment (IPE)**

- Manages all work done on IPE (demand maintenance, PMs, and large projects)

- **Equipment Utilization**

- Tracks the utilization of IPE and vehicles
- Utilization can be tracked on an as needed, daily, weekly, monthly basis
- Utilization rates can be viewed on-line or via reports and compared to utilization objectives

- **Training Certifications**

- Training requirements and certifications can be projected and actual training attendance tracked

- **Labor**

- Actual costs calculations based on different overhead rates depending on user
- Actual labor reports can be changed after the labor transaction is approved

NAVSEA Shipyards

- **Background**

- Support for Norfolk, Puget Sound, Portsmouth and Pearl Harbor shipyards
- Asset Management for many different types of assets integrated into single database structure – industrial plant equipment, facilities, Tool Management, weight handling equipment, refueling gear, test equipment, weld rods and filler.
- Tracks over 150,000 pieces of equipment, over 100,000 tools, and over 15,000 inventory items

- **Tool Management**

- Supports inventory management (stocking, re-stocking, etc of bulk, special, unique, and consumable tools) as well as operations of tool cribs (issuing, exchanges, tracking, etc.)
- Provides kitting functionality – templates and tool kits
- Ensures TMDE tools are tracked and calibrated on schedule

- **Refueling Gear**

- Tracks the status and condition of nuclear refueling gear

- **Weight Handling**

- Tracks the status, condition and issuance of weight handling equipment

- **Contract Management**

- Ties Contracts, delivery orders, purchase orders to Work Orders for status and cost information

NAVAIR Depots

- **Background**

- Support for North Island, Jacksonville, and Cherry Point NADEPs
- Asset Management for many different types of assets integrated into single database structure – industrial plant equipment, facilities, weight handling, ground support and metrology equipment.
- Tracks over 320,000 pieces of equipment and over 20,000 inventory items

- **Metrology**

- System used for both Contractor and Organic work
- Manages complete business process – Recall, tracking asset thru Lab, capturing work performed (technician, hours, parts, standards, etc.), and shipment
- Quality Module provides for both In-Process Reviews (IPR) and Quality Process Reviews (QPR)

- **Industrial Plant and Equipment**

- Manages all work done on IPE (demand maintenance, PMs, and large projects)

- **Ground Support Equipment**

- Tracks Pre-Operational Inspection and Custody Maintenance information

Army Depots

- **Background**

- Support for Tobyhanna, Red River, Anniston, Letterkenny, and Corpus Christi depots
- Tracks Asset Management information for Industrial Plant Equipment and Facilities.
- Tracks over 36,000 assets and 10,000 inventory items.

- **Equipment Utilization**

- Tracks the utilization of IPE and vehicles.
- Utilization can be tracked on an as needed, daily, weekly, monthly basis
- Utilization rates can be viewed on-line or via reports and compared to utilization objectives

- **Facilities Management**

- Facilities maintenance activities are tracked through the use of Facility Service orders and Individual Job Orders

- **Weight Handling Equipment (Hoists, Hooks, etc)**

- Tracks inspections of Wire Ropes and Hoist Chains

- **Contract Management**

- Ties Contracts, delivery orders, purchase orders to Work Orders for status and cost information.

Dover Port Mortuary

- **Background**
 - Manage the control of mass casualties from the time of arrival at the Dover Port Mortuary until they are processed out of the facility
- **Casualty Tracking**
 - Positive tracking and control of casualties within the facility
 - Tracks time into and out of each processing station
- **Casualty Disposition Information**
 - Provides the mechanism for collection of information necessary to prepare the documentation to transport the casualty per the Next of Kin
 - Provides for the collection of information necessary to automatically prepare the DoD Death Certificate
- **Medical Examiner Direction**
 - Allows the Armed Forces Medical Examiner to document positive identification information
- **Personal Effects Tracking and Control**
 - Provides the documentation of all of the personal effects that accompany the casualty to ensure full accountability
 - Provides the documentation to dispose of the personal effects IAW with the Next of Kin direction
- **Casualty Status Information**
 - Provides management information relating to casualty from arrival until departure